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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------------|------------------------|
| 10/718,211 | 11/20/2003 | Yigal Accad | EFIM0331 | 9028 |
| 31408 7590 06/15/2007 LAW OFFICE OF JAMES TROSINO 92 NATOMA STREET, SUITE 211 SAN FRANCISCO, CA 94105 | | | EXAMINER ZHENG, JACKY X | |
| | | | ART UNIT 2625 | PAPER NUMBER |
| | | | MAIL DATE 06/15/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/718,211

Applicant(s)

ACCAD ET AL.

Examiner

Jacky X. Zheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-64 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on November 20, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 11/20/2003 & 6/20/2005.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

1. This is the initial office action based on the application filed on November 20, 2003.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on November 20, 2003 and June 20, 2005 were filed on and after the mailing date of the application on November 20, 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

3. Claims 30, 40, 50 and 59 are objected to because of the following informalities: there appears to be a missing of an "article" in front of the word "apparatus" on line 1 of each claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 2-3, 12-13, 22-23, 31-32, 41-42 and 51-52** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Claims 2, 12, 22, 31, 41 and 51 recite the limitation of “the surrounding pixels comprise a circular shape”, and claims 3, 13, 23, 32, 42 and 52 recite the limitation of “the sounding pixels comprise an elliptical shape”. However, Examiner has not able to find any *explicit* and *sufficient* supports from the disclosure with regard to such limitations stated in consideration of the claim languages, “the surrounding pixels” being “circular or elliptical shapes”. Instead, as disclosed in the “Specification”, i.e. Page 9, 2nd and 4th Paragraphs, “trapping windows”, rather than “*the surrounding pixels*” are illustrated also in Figures 5A-5D being “*approximately circular in shape*”, and as in Figure 5E-5J being “*approximately elliptical in shape*”. Therefore, the abovementioned claims are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

With regard to prior art rejection of the stated claims in following sections of this office action, and purpose of advancing the prosecution, abovementioned limitations of “circular and elliptical shapes” will be presumed by Examiner to be relating to the “trapping windows” (or trapping neighborhood or kernel as commonly known in the art), as supported by the original disclosure until further clarification with *explicit* and *sufficient* descriptions in the claim is provided in the future.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claims 5-7, 10, 15-17, 20, 25-27, 29, 34-36, 39, 44-46, 49, 54-56 and 58** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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8. **Claims 10, 20, 29, 39, 49 and 58** recite the limitation "the colorant value" in line 1 of each claim. Such a limitation has not been *explicitly* depicted with sufficient descriptions in each of the instant claim, indicating that "the colorant values" are referring to either: "the surrounding pixel", "the first pixel" or perhaps both.

Claims 5-7, 15-17, 25-27, 34-36, 44-46 and 54-56 recite the limitations of "*determining a sum of magnitudes of differences*" in claims 5, 15, 25, 34, 44 and 54; "*determining a magnitude of a sum of differences*" in claims 6, 16, 26, 35, 45 and 55; and "*determining a difference between a sum of magnitude of differences*" in claims 7, 17, 26, 36, 46 and 56, such limitations have not been *explicitly* depicted with sufficient descriptions in each of the instant claim to clearly distinguish from one and another. The scopes of such limitations are unable to be differentiated and determined since the limitations have not depicted with sufficient differentiating descriptions in each of the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. **Claims 1-7, 9-17, 19-36, 38-46, 48-59 and 61-64** are rejected under 35 U.S.C. 102(b) as being anticipated by **Morgana (U.S. Patent No. 6,377,711)**.

With regard to claim 1, the claim is drawn to a method for electronically trapping a first digital color image pixel comprising a plurality of colorant values (*See Morgana, i.e. "Abstract"*,

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disclose the trapping methods and systems), the method comprising: identifying a plurality of pixels that surround the first pixel (*i.e. Figure 9, Step S110*), each of the surrounding pixels comprising a plurality of colorant values (*i.e. Figure 9, Step S140 & Step S190, "first & second pixels" adjacent (or "surrounding") the target pixel (or "the first pixel" in claim 1)*); comparing a colorant value of each of the surrounding pixels with a corresponding colorant value of the first pixel; identifying one of the surrounding pixels to control trapping of the first pixel (*i.e. Figure 9, Step S160*); and trapping the first pixel based on a relationship between a colorant value of the first pixel and a corresponding colorant value of the identified controlling pixel (*i.e. Figure 9, Step S250*).

With regard to claim 2, the claim is drawn to the method of claim 1, wherein the surrounding pixels comprise a circular shape (*See Morgana, i.e. Figure 1; the disclosed definition of "approximately circular in shape" from Applicant's disclosure, Page 9, 2nd Paragraph, & Figure 5A*).

With regard to claim 3, the claim is drawn to the method of claim 1, wherein the surrounding pixels comprise an elliptical shape (*See Morgana, i.e. Figure 2; the disclosed definition of "approximately elliptical in shape" from Applicant's disclosure, Page 9, 2nd Paragraph, & Figure 5G*).

With regard to claim 4, the claim is drawn to the method of claim 1, wherein comparing further comprises determining differences between a colorant value of the each of the surrounding pixels and a corresponding colorant value of the first pixel (*i.e. Figure 9, Steps S150-S160 and S200-S210*).

With regard to claim 5, the claim is drawn to the method of claim 4, wherein comparing further comprises determining a sum of magnitudes of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel (*i.e. column 1, lines 62-64, disclose “the sum of differences between a density level for a pixel and the densities of the eight adjacent pixels”*).

With regard to claim 6, the claim is drawn to the method of claim 4, wherein comparing further comprises determining a magnitude of a sum of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel (*i.e. column 1, lines 62-64, disclose “the sum of differences between a density level for a pixel and the densities of the eight adjacent pixels”*).

With regard to claim 7, the claim is drawn to the method of claim 4, wherein comparing further comprises determining a difference between a sum of magnitudes of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel, and a magnitude of a sum of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel (*i.e. column 1, lines 62-64, disclose “the sum of differences between a density level for a pixel and the densities of the eight adjacent pixels”*).

With regard to claim 9, the claim is drawn to the method of claim 1, wherein the relationship comprises a difference between a colorant value of the identified pixel and a corresponding colorant value of the first pixel (*i.e. Figure 9, S160 & S210*).

With regard to claim 10, the claim is drawn to the method of claim 1, wherein the colorant values comprise cyan, magenta, yellow and black colorants (*i.e. Column 3, lines 1-12,*

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disclose "comparing the color attributes, such as...the amount of cyan, magenta, yellow and black colorants of the pixel..."

With regard to claims 11-17 and 19-20, the claims are drawn to a method for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the method comprising the *substantially* identical limitations recited in claims 1-7 and 9-10 respectively (*The claims are rejected under the same grounds for at least the reasons set forth above. See the detailed discussion of the claims 1-7 and 9-10 above*).

With regard to claims 21-29, the claims are drawn to a method for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the method comprising the *substantially* identical limitations recited in claims 1-7 and 9-10 respectively (*The claims are rejected under the same grounds for at least the reasons set forth above. See the detailed discussion of the claims 1-7 and 9-10 above*).

With regard to claims 30-36 and 38-39, the claims are drawn to a method for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the method comprising the *substantially* identical limitations recited in claims 1-7 and 9-10 respectively (*The claims are rejected under the same grounds for at least the reasons set forth above. See the detailed discussion of the claims 1-7 and 9-10 above*).

With regard to claims 40-46 and 48-49, the claims are drawn to a method for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the method comprising the *substantially* identical limitations recited in claims 1-7 and 9-10 respectively (*The claims are rejected under the same grounds for at least the reasons set forth above. See the detailed discussion of the claims 1-7 and 9-10 above*).

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With regard to claims 50-58, the claims are drawn to a method for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the method comprising the *substantially* identical limitations recited in claims 1-7 and 9-10 respectively (*The claims are rejected under the same grounds for at least the reasons set forth above. See the detailed discussion of the claims 1-7 and 9-10 above*).

With regard to claim 59, the claim is drawn to (an) apparatus for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the apparatus comprising: a memory adapted to store a plurality of pixels that surround the first pixel, each of the surrounding pixels comprising a plurality of colorant values (*See Morgana, i.e. column 8, lines 40-41*); a first logic element adapted to determine differences between the colorant values of each of the surrounding pixels from the corresponding colorant values of the first pixel (*See Morgana, i.e. column 8, lines 43-45*); a second logic element adapted to sum magnitudes of the differences associated with each of the surrounding pixels and subtract therefrom a magnitude of a sum of the differences associated with each of the surrounding pixels (*See Morgana, i.e. column 8, lines 46-48*); a third logic element adapted to determine the surrounding pixel associated with the maximum sum from the second logic element and a fourth logic element adapted to trap the first pixel based on a relationship between a colorant value of the first pixel and a corresponding colorant value of the surrounding pixel determined by the third logic element (*See Morgana, i.e. column 8, lines 49-53*).

With regard to claim 61, the claim is drawn to the apparatus of claim 59, wherein the first logic element comprises a plurality of differencing elements (*See Morgana, i.e. column 8, lines 43-45, disclose "a comparator" compares a "pixel attribute"*).

With regard to claim 62, the claim is drawn to the apparatus of claim 61, wherein each of the differencing elements corresponds to an associated one of the surrounding pixels (See *Morgana*, i.e. column 8, lines 43-45, disclose “a comparator” compares a “pixel attribute” of a selected pixel in an image only with diagonally neighboring pixels...”).

With regard to claim 63, the claim is drawn to the apparatus of claim 59, wherein the second logic element comprises a plurality of summing elements (See *Morgana*, i.e., column 8, lines 46-48, disclose “an edge detector”; column 1, lines 62-64, disclose “an edge quantity is calculated as the sum of differences between a density level for a pixel and densities of the eight adjacent pixels”).

With regard to claim 64, the claim is drawn to the apparatus of claim 63, wherein each of the summing elements corresponds to an associated one of the surrounding pixels (See *Morgana*, i.e., column 8, lines 46-48, disclose “an edge detector”; column 1, lines 62-64, disclose “an edge quantity is calculated as the sum of differences between a density level for a pixel and densities of the eight adjacent pixels”).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claims 8, 18, 37 and 47** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Morgana** as applied to claims 1-7, 9-17, 19-36, 38-46, 48-59 and 61-64 above, and further in view of **Geurts et al. (U.S. Pub. No. 2001/0055130)**.

With regard to claim 8, the claim is drawn to the method of claim 1, further comprising adjusting the compared colorant values of each of the surrounding pixels based on a corresponding distance between the surrounding pixel and the first pixel.

Morgana does not *explicitly* disclose the limitation of adjusting the compared colorant values of each of the surrounding pixels based on a corresponding distance between the surrounding pixel and the first pixel.

However, **Geurts et al.** disclose the limitation of “comparing the distances of the pixel from the trapping edge according to a distance measure with a provided measure indicative of the distance of the pixel from any edge of the image to determine ...including setting a trap color for the trap pixel” (*See Geurts et al., i.e. Paragraph [0018]*).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have modified **Morgana** to include the limitation of adjusting the compared colorant values of each of the surrounding pixels based on a corresponding distance between the surrounding pixel and the first pixel taught by **Geurts et al.** It would have been obvious to one of ordinary skill in the art at the time of invention to have modified **Morgana** by the teachings of **Geurts et al.** to include the limitation of adjusting the compared colorant values of each of the surrounding pixels based on a corresponding distance between the surrounding pixel and the first pixel taught by **Geurts et al.**, for purposes of “rapidly and automatically determining trap

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shapes...” (i.e. Paragraph [0013]) and allow the user “easily be able to vary the direction-dependent trapping distances” (i.e. Paragraph [0015]).

With regard to claim 18, the claim is drawn to the method of claim 11, further comprising the *substantially* identical limitations recited in claim 8. *(The claim is rejected under the same ground for at least the reasons set forth above. See the detailed discussion of claim 8 above).*

With regard to claim 37, the claim is drawn to the apparatus of claim 30, further comprising means for performing the *substantially* identical limitations recited in claim 8. *(The claim is rejected under the same ground for at least the reasons set forth above. See the detailed discussion of claim 8 above).*

With regard to claim 47, the claim is drawn to the apparatus of claim 30, further comprising means for performing the *substantially* identical limitations recited in claim 8. *(The claim is rejected under the same ground for at least the reasons set forth above. See the detailed discussion of claim 8 above).*

13. **Claim 60** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Morgana** as applied to claims 1-59 and 61-64 above, and further in view of **Nhu (U.S. Patent No. 5,848,224)**.

With regard to claim 60, the claim is drawn to the apparatus of claim 59, wherein the first, second, third and fourth logic elements comprise *pipelined logic elements*.

Morgana does not *explicitly* disclose the limitation of “pipelined logic elements”.

However, Nhu discloses the limitation of the concept of “concurrent processing” or “pipelining”, used to “reduce overall processing time” and “maximize throughput” (*See Nhu, i.e. column 3, lines 14-16; column 10, lines 35-37*).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to have modified Morgana to include the limitation of “pipelined logic elements” taught by Nhu. It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Morgana by the teachings of Nhu to include the limitation of “pipelined logic elements” taught by Nhu, for the purposes of “reduce overall processing time” and “maximize throughput” (*See Nhu, i.e. column 3, lines 14-16*).

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- A. Weinholz et al. (U.S. Patent No. 6,795,214) disclose the method generates trapping contours in a print page, specifically taking into consideration of the neighboring pixels of the target pixel.
- B. Ebner (U.S. Pub. No. 2003/0128377) discloses a method for black trapping and under print processing.
- C. Munger et al. (U.S. Pub. No. 2003/0063302) disclose the testing means and process for controlling offset and digital printing, specifically disclose the *trapping patterns being round and elliptical shapes*.

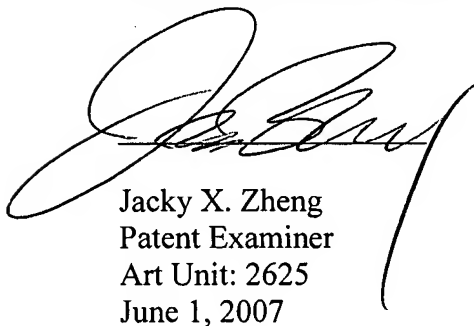
- D. Klassen (U.S. Patent No. 6,345,117) discloses a method for automatic trap selection for correcting for separation mis-registration in color printing.
- E. Kohn (U.S. Pub. No. 2003/0011796) discloses a method for producing traps in print page.
- F. Yoshino et al. (U.S. Patent No. 6,141,462) disclose an invention carries out a desired image processing while *using adjoining relationship between image parts, specifically the desired image processing being "trapping process"*.
- G. Bloomberg (U.S. Patent No. 5,581,667) discloses an electronic trapping system for digitized text and images.
- H. Deutsch et al. (U.S. Patent No. 5,542,052) disclose an invention relates to applying traps to a printed page specified in a PDL format.
- I. Rumph et al. (U.S. Patent No. 6,844,942) disclose a method for trapping raster data in a run-length encoded form.
- J. Hawksworth et al. (U.S. Patent No. 6,813,042) disclose digital prepress trapping tools.
- K. Speck (U.S. Patent No. 6,654,145) discloses a device and method for preparing document for multicolor reproduction.
- L. Estrada et al. (U.S. Patent No. 6,970,271) disclose d device independent trap color specification.
- M. Lane et al. (U.S. Patent No. 7,116,821) disclose an invention relates to color trapping for an image forming apparatus

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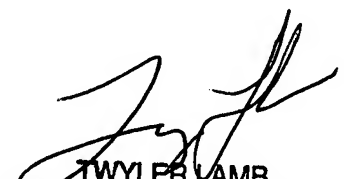
15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacky X. Zheng whose telephone number is (571) 270-1122. The examiner can *normally* be reached on Monday-Friday, 7:30 a.m.-5p.m., Alt. Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler M. Lamb can be reached on (571) 272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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Patent Examiner
Art Unit: 2625
June 1, 2007



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